

### **REMARKS**

Claims 7, and 33-65 were pending in this application. Claims 7, and 33-48 have been cancelled and claim 59 has been amended. No new matter has been added with the amendments. Support for the amendments can be found throughout the specification as originally filed.

Applicants thank Examiner Angebrannt for the telephonic interviews on September 3, 2008 and October 2, 2008. During the interviews, Applicants' representative discussed the claimed invention and distinguished the claimed invention from the teachings of the cited references. The comments and remarks presented during the interview are incorporated in the substantive response below, and the amendments, as well as the declaration of the inventor D.V.G.L.N. Rao, Ph.D, which was filed via fax with the patent office on September 26, 2008.

Applicants gratefully acknowledge the indication by the Examiner that, subject to the information declared in the declaration, method claim 49 would be allowable. Applicants further acknowledge the indication by the Examiner that the method of claim 59, if written as a claim depending from claim 49, would be allowable. Applicants have amended claim 59 accordingly. Applicants have also addressed the Examiner's suggestions for a signed declaration in the aforementioned declaration by Dr. Rao.

Specifically, the declaration states that Wu-57 uses two kinds of mono-azobenzene molecules, methyl yellow (MY) and ethyl orange (EO) doped into two kinds of polymers, polymethylmethacrylate (PMMA) and polyvinylalcohol (PVA), respectively to produce samples of MY-PMMA films and EO-PVA films as the storage medium. As its storage medium, the present invention also teaches using MY molecules doped into PMMA polymer to produce samples of MY-PMMA films in one embodiment, and using methyl orange (MO, which is a homologue of ethyl orange molecule used by Wu-57), doped into PVA polymer to produce samples of MO-PVA films in another embodiment. The MY-PMMA films used in both Wu-57 and an embodiment of the present invention, have the same materials and composition, and have the same glass transition temperature, T<sub>g</sub>. The EO-PVA film used in Wu-57 and the MO-PVA film used in an embodiment

of the present invention use the same polymer PVA and thus have approximately the same glass transition temperatures, because the glass transition temperature depends mainly on the polymer, and moreover the amount of azobenzene doped into polymer is negligible. In particular,  $T_g$  is approximately 85° C for PVA and approximately 105° C for PMMA.

Further, the declaration states that Wu-57 applies a biphotonic four-wave mixing process to the storage medium to generate transient (i.e., volatile) gratings. In contrast, the inventive process of the present application, when applied to the storage medium having the very same polymer (PVA) as Wu-57, and approximately the same  $T_g$  of the resultant composition, generates an unobvious result, which is a non-volatile grating that is stable for an extended period of time. All tests of the inventive process using the PVA polymer, described in the present application, were conducted at room temperature which is well below the  $T_g$  of the resultant composition of the stable grating. The resulting grating is stable and can be read repeatedly for 12 hours, without obvious attenuation. This stable orientation grating is neither observed, nor expected in the process of the Wu-57 reference.

In view of the above amendments and remarks, Applicants submit that the pending application is in condition for allowance, and such action is respectfully solicited.

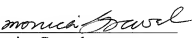
Along with this response, Applicants file a Supplemental Information Disclosure Statement (IDS) which discloses the two references that the Examiner brought to our attention during the interview on October 2, 2008

A Request for Continued Examination and a Petition for a One-Month Extension of Time accompany this response. Applicant believes no additional fees are due. However, if a fee is due, please charge our Deposit Account No. 08-0219, or credit any overpayments, under Order No. 1823430.00121US1 from which the undersigned is authorized to draw.

Respectfully submitted,

Dated:

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